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SUPPORT

OTHER FUNDS AND PROGRAMMES

United Nations Fund for Science and Technology for Development

and

United Nations Revolving Fund for Natural Resources Exploration

Report of the Administrator

SUMMARY

The present report describes the activities of the two Funds in their new setting. They are now operating under common management. As a consequence of this merger, administrative expenditure and, in particular, personnel cost have been reduced considerably. Despite their difficult financial situation, both Funds continue to carry out fully their respective activities, albeit on a slightly reduced scale. The United Nations Fund for Science and Technology for Development (UNFSTD) has now focused its work on five priority programmes, i.e., national science and technology strategies, technology innovation and entrepreneurship, technology information, quality control and maintenance, as well as new and renewable sources of energy.

The United Nations Revolving Fund for Natural Resources Exploration (UNRFNRE) made successful mineral discoveries in Ecuador, Honduras, Peru and the Philippines. This Fund has now received its first replenishment payment and another is expected in 1991.

I. THE OFFICE OF THE UNITED NATIONS FUND FOR SCIENCE AND TECHNOLOGY FOR DEVELOPMENT (UNFSTD) AND THE UNITED NATIONS REVOLVING FUND FOR NATURAL RESOURCES EXPLORATION (UNRFNRE) IN ITS NEW SETTING

1. Last year, a special report was submitted (DP/1990/59) in response to Governing Council decisions 89/52 and 89/53 of 30 June 1989, in which the Council requested the Administrator to explore alternative ways of securing the financial viability of UNFSTD and UNRFNRE.

2. The Administrator, in his report to the Governing Council at its thirty-seventh session (DP/1990/59), recommended a significant reduction of the administrative expenses of both Funds. In its decision 90/39 of 20 June 1990, the Council approved the proposal by the Administrator to entrust the management of the two Funds to a single office while maintaining their identity and their respective operating procedures. This decision has now been fully implemented and has resulted in considerable reductions in administrative expenditures in such areas as personnel and office costs.

3. Despite these savings in the administrative costs of both Funds, a considerable increase in income will be necessary to sustain a viable level of programme activities for the future. It is estimated that the minimum requirements for the Funds are $5 million for UNFSTD and $10 million for UNRFNRE, per annum. The experience of the past years strongly indicates that UNFSTD will have to continue to rely to a large extent on sub-trust fund contributions and on relatively small contributions from a large number of developing countries, while UNRFNRE continues to rely on a limited number of traditional donors. Beyond these limitations, the Funds will explore every viable source of contributions, including the private sector and cost-sharing arrangements.

II. OPERATIONAL ACTIVITIES

4. Programme activities continued for both Funds during the reporting period (1989-1990) on a slightly reduced scale. UNRFNRE concentrated on a relatively small number of large-scale ongoing projects as well as pipeline projects, whereas UNFSTD carried out a substantially larger number of smaller projects.

A. United Nations Fund for Science and Technology for Development (UNFSTD)

5. During 1989 and 1990 UNFSTD supported about 40 ongoing projects and now has an active pipeline of about 20 projects. Based on recent resolutions of the Intergovernmental Committee on Science and Technology for Development (IGCSTD), including resolution 5 (IX) of 7 August 1987, the Fund concentrates on a small number of selected areas of science, technology and energy. In the following text emphasis is therefore put on five programme areas. Individual projects are described because of either their size or their significance within the programme.

6. All projects are designed to strengthen national capacity, and the large majority of them fall within the area of transfer and adaptation of technology for development which is one of the six priority areas of the United Nations Development Programme (UNDP) as determined by the Governing Council in decision 90/34 of 23 June 1990.

1. National science and technology strategies

7. An important part of the Fund's work has always been to help developing countries in devising strategies, policies and structures in the field of science and technology. Ethiopia, Cyprus, Burundi, Jordan and the Gulf Cooperation Council have benefited from UNFSTD assistance in 1989 and before then, sometimes within small financial allocations under $100,000. Regional activities include the recently approved project "Management of Technology" implemented by the Asian Institute of Technology in Bangkok. This project is financially supported by France.

8. The Fund has now - in close cooperation with the Centre for Science and Technology for Development (CSTD) - further sharpened the methodology for national science and technology strategies. The centre-piece of the new approach is endogenous capacity-building, a concept put on the international agenda since the United Nations Conference on Science and Technology for Development, held in Vienna in 1979, although it is only now that its practical applicability is being tested.

9. The following three features characterize the concept:

(a) Emphasis on autonomous and informed decision-making regarding national science and technology activities, such as technology choice and proper mix of foreign and local technology;

(b) Widest possible participation in this decision-making process (shareholder dialogue) from all groups of society;

(c) Technology assessment.

10. UNFSTD has, within the above described concept, embarked on an ambitious programme for Cape Verde, Jamaica, Pakistan, Togo, Uganda and Viet Nam. The preparatory assistance has been concluded, and national coordinators and steering committees are being set up. This programme, which is supported by Germany, will lead - after the appropriate studies have been carried out, mainly by national consultants - to a portfolio of priority activities which will include proposals for technical cooperation, locally funded projects, legislative and financial measures, and recommendations for venture capital mechanisms and for institutional changes.

2. Technology innovation and entrepreneurship

11. UNFSTD has embarked on a programme called "technology rights banks" which endeavours to match technological innovation from industrialized countries with the needs of selected developing countries.

12. In addition, UNFSTD has launched a major programme of technological innovation and entrepreneurship, mainly through the concept of the technology business incubator. This concept has been developed to support the transfer of research results to the market-place and to promote small and medium-scale enterprises in the technology field. The technology business incubator provides focused management and related assistance as well as shared facilities to start up enterprises for a limited period. It assists from the conception of a technical proposal through the development and demonstration phases, and on to commercial utilization.

13. Activities at the country level typically include the following: (a) reconnaissance mission by consultants; (b) seminar on the technology business incubator concept; (c) feasibility consideration by national consultants supported by international consultants; (d) training, including an orientation study tour for representatives of parties concerned, intensive training for selected incubator managers and, concurrently, "pre-incubation entrepreneurial course" for potential users; (e) pre-launch activities for legal, financial and organizational set-up; and (f) operation of the technology business incubator.

14. The following activities took place in 1989 and 1990 under the Technology Business Incubator Programme.

(a) China

15. The Technology Incubation Centre (TIC) scheme initiated by UNFSTD in close collaboration with the State Science and Technology Commission (SSTC) has resulted in the establishment of four incubation centres at Wuhan, Guangzhou, Tianjin and Shenzhen. This is a component of China's TORCH programme, which has the goals of creating 2,000 entrepreneurs in advanced technology fields and training 20,000 management personnel to handle such activities. The incubation activities are being supported by an initial SSTC budget of ¥RMB 3 million provided as loan or equity share and by funds from local sources.

16. The UNFSTD/European Commission-sponsored Feasibility Study for the TIC programme in China proposes a holding company (termed China Technology Incubation Inc.) which would take a majority share in local incubators. Each technology incubator would be a separate semi-autonomous corporate entity. A Manual of Best Practices for China's TIC managers has also been compiled.

17. The Third SSTC/UNFSTD Beijing International Conference on Technological Innovation and Entrepreneurship Development in May 1990 brought the international experience so far gained in industrialized and developing

countries to the attention of some 40 participants, mainly from developing countries. The Conference stressed the importance of "incremental innovation" in productive enterprises and outlined the role of the state as the agent for creating the economic environment of incentives and competition, leaving the creation of goods, employment and exports to private initiatives. Participants from developing countries benefited from financial support from the United Nations Development Programme (UNDP) through the Special Unit for Technical Cooperation among Developing Countries (TCDC).

(b) Caribbean Basin

18. The first incubator - INOTECH - was inaugurated in Trinidad in February 1989, under the sponsorship of the Government and the Caribbean Industrial Research Institute (CARIRI). UNFSTD is assisting in training the incubator manager and in surveying the stakeholders and potential end-products, organizational structure, financial analysis and technology transfer assessment.

19. UNFSTD has run workshops on TIC approaches in Barbados, Guyana and Jamaica, followed by expert missions to examine the feasibility of establishing incubators.

(c) Africa

20. There are TIC projects under way in four countries, namely, Côte d'Ivoire, Gabon, Nigeria and Zimbabwe.

21. Each of these is now approaching the final business plan phase. In Nigeria, a local state government has agreed to provide a building and funds for the first incubator, which will be established in 1991. The private sector group sponsoring the incubator is also contributing to start-up funds and will assume management responsibility for the Centre.

22. In Zimbabwe, a local development trust has offered to be the primary sponsor and has backed its request with offers to provide financial support. In the case of Côte d'Ivoire, it is the Chamber of Industry, Commerce and Agriculture which is playing this lead role.

23. In Gabon, instead of an incubator scheme, a business centre is proposed with a strong outreach programme for assistance to new entrepreneurs.

(d) Asia

24. UNFSTD, in collaboration with local authorities, conducted a workshop in Thailand (April 1989). It was attended by 50 to 60 participants from Ministries, banks, research institutions, universities, corporations and consulting firms.

25. In India, starting in September 1989, a consultant initiated detailed plans for establishing technology incubation centres focused on biotechnology

and micro-electronics; others will be linked to export processing zones and government-sponsored research laboratories. A four-person team from India visited incubation centres and related facilities in the United States and in Great Britain in January 1990. The feasibility studies are now under way, and the first incubators are expected to be established by the end of 1990.

26. In the Philippines, a comprehensive UNFSTD-assisted programme has been under way since January 1990 for six incubator centres in various regions, which will possibly be supported by a coordinating, financing and training group.

(e) New project activities

27. In 1990, four projects were approved, i.e., in Poland, Thailand, Togo and Turkey, and projects in Chile and the Republic of Korea are in the final stage of approval.

28. In Thailand, following the feasibility study on the establishment of the Technology Park completed by the Government in 1990, a feasibility study on the establishment of technology business incubators, a component of the Technology Park, is being undertaken with UNFSTD assistance.

29. Two preparatory missions were fielded to Poland in December 1989 and March 1990 in collaboration with European companies. Technology business incubators are considered a workable modality to strengthen the private sector with development of small-scale enterprises in Eastern European countries.

30. In Togo and Turkey project activities started in early 1991.

31. Ghana and Mexico have indicated their interest in establishing technology business incubators with the assistance of UNFSTD.

3. Technology information

32. This area covers the dissemination of technology-related information as well as information technologies.

33. By far the largest project continued to be the Technological Information Pilot System (TIPS), an information exchange among over 2,000 users in 10 countries in Asia, Africa, the Arab States and Latin America. TIPS packages cover, inter alia, technology and trade information on agro-industries, food processing, energy, electronics, pharmaceutical and biotechnology. As of the beginning of 1991, the project is being financed under the Global and Interregional Programme and is being managed by the Division for Global and Interregional Programmes (DGIP) of UNDP.

34. Another project, Technology Expert Knowledge System (TEKSYST), was conceived to use computer-based state-of-the-art technology, through UNDP's existing network of field offices, to provide technical and scientific

information to developing countries upon request. However, before embarking on the implementation of this sophisticated and ambitious scheme it was felt to be useful to assess the needs of field offices and interested developing countries by making available a "Guide To Information Systems for UNDP Field Offices". This Guide has turned out to be highly popular. It will serve as a yardstick to decide about the most appropriate information system for UNDP field offices for information beyond the internal management needs. The Science and Technology Referral Systems for Journalists project, which is now in the pipeline for the Philippines and which may be replicated in several other developing countries, tries to mobilize locally available expertise to increase public awareness of science and technology. By making expertise instantly available to journalists through a free-of-charge referral system using volunteer scientists and specialists, the quality of the media coverage on such science and technology-intensive topics as environment, energy and agro-industry can be improved.

35. The Fund has also helped to build up the Computer Science Division at the Asian Institute of Technology in Bangkok. As part of this project, more than 200 software specialists have been trained, many coming from least developed countries (LDCs) of the region. The project is now coming to an end and a follow-up is being considered in the form of a regional software technology centre, which should become self-sustaining.

4. Quality control and maintenance

36. One of the greatest losses for the national economies of many developing countries is improper or total lack of maintenance for many imported products. The situation is particularly alarming in Africa. With regard to scientific instruments, it is estimated that in this region over 40 per cent of them are not in use because of improper maintenance. UNFSTD, with financial support by Japan and in collaboration with the International Foundation for Science (IFS), is addressing this issue in countries which are members of the Southern African Development Coordination Conference (SADCC). The project is managed at the country level by national coordinators and concentrates on "hands-on" training in maintenance and repair. Over 1,000 instruments in the relevant research institutions in southern Africa have been identified and are now being replaced, sorted out or repaired. As a result of the project, a Network of Users of Scientific Equipment in Southern Africa has been established and a regional newsletter has been launched. The project has made a good start and may well serve as a model for other parts of Africa and beyond.

37. While maintenance comes after the initial investment, quality control is an integral part of it. It is a dimension of the manufacturing process indispensable for export as well as for the internal market. The UNFSTD-supported National Food Technology and Quality Control Research Centre in China works on soya-bean-derived proteins and national standards for quality control. The non-destructive testing project covering Latin America provides quality control through sophisticated methods such as ultra-high

frequency wares, tomography, eddy currents for heavy industry and the power generating sector. This project was concluded in 1990.

5. New and renewable sources of energy

38. UNFSTD projects in the field of energy are funded through the Energy Account, mainly through existing trust fund arrangements. Most of them are in the field of new and renewable energy or energy conservation like the power system loss reduction project in Yemen, which benefits from the Organization of Petroleum Exporting Countries (OPEC) and IPF funding. The recommendations of this project will be implemented through an International Development Association (IDA) credit expected to be approximately $15 million.

39. Another project which is nearing completion deals with the reparation of a feasibility and design study for a 3MW mini-hydro power station in Madagascar. This project, co-financed by Austria and the OPEC Fund through the Energy Account, investigated the feasibility of providing electricity to rural areas as well as for irrigation. The actual construction of the power station will cost approximately $15 million and is expected to be financed, inter alia, by Austria.

40. Another focus of activities undertaken in the energy sector lies in the training of local personnel. In this connection, UNFSTD through the Energy Account participated in the funding and organization of a household and rural energy seminar for the Pacific Island countries, which was held in Vanuatu in November 1990. The other sponsors of this seminar were the World Bank and the European Community through the Lomé II Convention. In addition, the OPEC Fund, through the Energy Account, and the United Nations Industrial Development Organization (UNIDO) have approved funding for energy audit training workshops to be organized in the United Republic of Tanzania and Uganda to train local engineers and technicians to undertake energy audits in the industrial, commercial, residential and transport sectors and to formulate and implement measures aimed at energy conservation.

41. In 1989 and 1990, UNFSTD provided advisory services to the UNDP bureaux in energy projects prior to their submission to the Project Appraisal Committee for approval. Also, UNFSTD undertook several project formulation missions for the regional bureaux in the energy sector. During the course of last year, UNFSTD provided technical monitoring on behalf of the Regional Bureau for Africa to a project aimed at improving the efficiency of diesel-operated power stations in 10 African LDCs. This project is jointly funded by UNDP, the Finnish International Development Agency (FINNIDA), the Danish International Development Agency (DANIDA), Official Development Assistance (ODA), the United States Agency for International Development (USAID) and the German Federal Ministry for Economic Cooperation (BMZ) and is implemented by the World Bank.

42. At a meeting of the Inter-Agency Group on New and Renewable Sources of Energy held in New York in March 1990, UNDP was designated the lead agency to

prepare a strategy for disseminating/commercializing proven renewable energy technologies. In preparing such a strategy document, UNDP solicited and obtained the participation of the Governments of France (Agence Française pour la Maîtrise de l'Enérgie) and the United States of America (United States Department of Energy); a final document was expected to be issued soon.

43. Among the several pipeline projects are the construction of a 1MW mini-hydropower station in Bhutan, funding for which will be provided by the Government of Austria ($5 million) and the OPEC Fund through the Energy Account ($200,000), and a project in the Sudan aimed at meeting the basic energy needs of rural communities through the development and utilization of renewable sources of energy.

Transfer of Knowledge through Expatriate Nationals (TOKTEN)

44. TOKTEN, which is under UNFSTD management, expanded further during the past two years. In 1989, 275 missions were carried out and in 1990, 1,251. There is now a total of 29 participating countries including Malta, Viet Nam, Poland and the Islamic Republic of Iran, all of which joined in 1990. The project for Poland is of particular significance since it is expected to lead to TOKTEN activities of an additional $6 million to $7 million funded from bilateral sources.

45. Recent evaluations of TOKTEN projects in Bangladesh, China, Ethiopia and Pakistan have confirmed the validity of the concept.

46. Close to 3,000 TOKTEN consultancy missions have so far been carried out in a wide range of fields, including an increasing number in high-technology areas such as micro-electronics, bio-engineering and medical research.

B. United Nations Revolving Fund for Natural Resources (UNRFNRE)

47. During 1990, a significant development took place in the pre-investment follow-up activities for the Fund's successful mineral discoveries in Ecuador, Honduras, Peru and the Philippines. The Fund has already received the first replenishment payment and further replenishments are expected in 1991. During 1990, UNRFNRE had five ongoing mineral exploration projects and nine projects in the active pipeline. The Fund was also involved in the preparation of Environmental Guidelines for the Mining Sector, which will be used in the appraisal of UNRFNRE projects.

1. Follow-up to pre-investment activities

48. A number of UNRFNRE projects supported in previous years resulted in follow-up activities during the period 1989-1990. These are summarized below.

49. Following the discovery by a UNRFNRE project of a massive chromite deposit on Dinagat Island in the Philippines, the Government granted mining

rights in 1990 to a local company. The Government of the Philippines has informed the Fund that replenishment payments will be made on a quarterly basis starting in 1991. The in situ value of the discovery is estimated at $US 45 million.

50. The Fund's discovery of a high-grade silver deposit at San Bartholome, in Ecuador, has reached the production stage. During the reporting period, a joint venture agreement was signed between a Canadian and a Japanese company to put the Bartholome mine into commercial production with a start-up date of April 1991. The estimated in situ value of this discovery is $US 25 million.

51. The Fund's discovery of the Yuscarán gold-silver deposit in Honduras has attracted several private investors, both local and foreign, and it is expected that the investment requirements will be met to put the Yuscarán deposit into production within the next two to three years. The Fund is assisting the Government in determining the best way to proceed towards the development of the mine.

52. In Peru, the discovery by UNRFNRE at Ananea contains 250 million cubic metres of gold-bearing gravel with approximately 1.6 million ounces of recoverable gold. During 1990 the Government of Peru made arrangements for the purchase of a dredge and it is possible that this discovery will lead to production by 1995. The estimated in situ gross value of the deposit is $US 700 million.

2. Ongoing projects

53. Field activities in Bolivia began in February 1990, following the mobilization of equipment at the project site in late 1989. This project is located in the Suches area, north-west of La Paz, and is aimed at delineating an economic deposit of placer gold similar in character to the Fund's discovery at Ananea, Peru. The minimum work programme is planned for 16 months and will consist of detailed glaciogeological mapping, drilling, pitting, laboratory analyses and the provision of access to the project site.

54. The first phase of exploration of pyrophyllite deposits in Fujian Province, China, was completed in August 1990. Extensive diamond drilling, trenching, pitting and chemical analyses have resulted in the identification of 5.5 million tonnes of good grade pyrophyllite in the Donzi area and a probable tonnage of 4 million tonnes of similar grade material in the Lingli area. The results of this first phase indicated that a second phase was warranted to determine more precisely the mineable tonnage and grade. The second phase, co-financed by the Italian Government, as was the first, consists of approximately 4,800 metres of drilling, ore dressing tests and preliminary market investigations.

55. During the reporting period, field activities in Guatemala continued with the exploration of the El Pato project area. By the end of October 1990, the minimum work phase was completed. In view of the encouraging results, the

Fund entered into a subsequent work phase to evaluate more precisely the tonnage and grade of the El Pato gold deposit.

56. The project in the Philippines, mentioned above, continued following the discovery of an economic deposit of massive chromite in the Bel-At Kong King target area. This discovery, which is being mined by numerous small-scale miners, contains between 1 and 2 million tonnes of a very rich chromite deposit. Drilling of the deposit to outline mineable extensions of the ore at Bel-At Kong King and exploration of similar targets in both Dinagat and Palawan Islands continued during the reporting period.

57. In May 1990 a Project Agreement was signed between the United Republic of Tanzania and the Fund to explore for gold in the Geita and Canuck areas, south of Lake Victoria. Following the ratification of the Agreement in September 1990, the Fund transferred equipment to Tanzania from its completed project in Rwanda and by year-end was making all arrangements for the commencement of field activities by late January 1991.

58. The preparation of Environmental Guidelines for the Mining Sector is now nearing completion. A draft of the Guidelines was reviewed by a task force composed of representatives of the World Bank, the United Nations and UNDP. The final draft was scheduled to be ready in the first quarter of 1991. This project was financed by the Norwegian Government.

3. Pipeline projects

59. Project identification and formulation activities continued throughout the reporting period and the Fund received several requests from developing countries for assistance in mineral exploration programmes. The pipeline includes projects in the Democratic People's Republic of Korea, Ecuador, Guinea, the Lao People's Democratic Republic, Mongolia, Myanmar, Namibia, Sri Lanka, Viet Nam and Zimbabwe. In the case of Zimbabwe, an agreement for the exploration of gold in central Zimbabwe is ready for signature. In Sri Lanka, a project to explore for heavy mineral beach sands rich in monazite, ilmenite, rutile and zircon was approved on 10 April 1990. The project area is located in the south-western part of the island. The Project Agreement is awaiting signature and ratification by the Government before the project is implemented. Assessment missions were carried out in response to all requests received by the Fund except in Namibia and Guinea. Missions to those two countries will be undertaken next year. UNRFNRE is actively seeking funds for the financing of this pipeline of defined projects.

60. The pipeline also includes geothermal projects in China, Costa Rica, Mexico and Nicaragua. However, project implementation is subject to the availability of funds. UNRFNRE also continued to assist the Government of Saint Lucia to attract the investment required for the installation of a generating plant to produce electrical power from the Fund's discovery of the geothermal reservoir at Soufrière.

III. FINANCIAL AND ADMINISTRATIVE MATTERS

61. UNFSTD and UNRFNRE, which operate now under common management, reduced their staff in 1990 from a total of 11 to 5 Professionals, and from 13 to 8 General Service staff. This substantial reduction has been achieved through attrition and reassignments.

62. UNRFNRE expenditures amounted to $1.2 million for 1989 and an estimated $3 million for 1990 from core resources. In addition, the Fund carried out two management services agreements for a total of $1.2 million. UNFSTD expenditures for the same period (including estimates for 1990) were $1.7 million core contributions and $6.6 million co-financing arrangements for a total of $8.3 million.

63. Both Funds continue to benefit from wide support from developing countries with regard to core contributions. However, this cannot compensate for a serious decline in contributions from major donors. The estimates below are based on realistic income and expenditure projections for 1991 and 1992:

Financial estimates for 1991 and 1992

	UNFSTD	UNRFNRE	Total
INCOME			
Unexpended resources, 1 January 1991	3 664 000	2 090 000	5 754 000
Core contributions	600 000	3 000 000	3 600 000
Non-core contributions (trust funds, cost-sharing)	1 800 000	-	1 800 000
Replenishment contributions	-	300 000	300 000
Management Service Agreement	-	890 000	890 000
Interest income	200 000	250 000	450 000
	6 264 000	6 530 000	12 794 000
EXPENDITURE			
Administrative budget	1 200 000	1 800 000	3 000 000
Project costs	3 500 000	4 000 000	7 500 000
	4 700 000	5 800 000	10 500 000
Reserve for new projects (from core contributions)	1 564 000	730 000	2 294 000

IV. FUTURE OUTLOOK

64. As mandated by the Intergovernmental Committee on Science and Technology for Development (IGCSTD), UNFSTD has now, after several years of preparation, all the elements united to launch a broad programme regarding endogenous capacity-building in science and technology. At the same time UNRFNRE has now finally reached the stage where replenishments from successful projects are forthcoming, thus providing substance to the revolving nature of this Fund. However, it should be noted that unless there is a substantial improvement in financial contributions, UNFSTD and UNRFNRE will not be able to sustain a viable level of project activities.